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ABSTRACT

The present invention describes a method of treating a disease that results from a deficiency of a biological factor which comprises administering to a mammal Sertoli cells and cells that produce the biological factor. In particular, the present invention describes a method of treating diabetes mellitus by transplanting pancreatic islet of Langerhans cells in conjunction with Sertoli cells to create an immunologically privileged site. A method of creating an immunologically privileged site and providing cell stimulatory factors in a mammal for transplants is further described by the present invention. The present invention further describes a method of creating systemic tolerance to foreign antigens. A method of enhancing the viability, maturation, proliferation of functional capacity of cells in tissue culture is further provided. A pharmaceutically composition comprising Sertoli cells and cells that produce a biological factor is also provided. In addition, treatment of an autoimmune disease via the transplantation of Sertoli cells alone into a transplant site other than the testes is disclosed. The dosage amount of Sertoli cells administered ranges from  $10^5$  to  $10^{10}$  cells. Also, an in vitro method of accelerating the maturation and increasing the proliferation and functional capacity of proliferating mammalian cells via the co-culturing of the mammalian cells with Sertoli cells is disclosed.